

# Slow-Start Adaptive Mechanisms to Improve Efficiency of Bandwidth Allocation

## Abstract of the Disclosure

[0088] Methods, apparatuses and systems directed to improving the efficiency of bandwidth allocation schemes by adapting to slow-start mechanisms associated with network communications protocols, such as the TCP/IP protocol suite. In one implementation, the present invention scales down the initial target rate assigned to a data flow to a fraction of an initial estimate of the effective rate capacity of the communications path between two hosts. As packets are received, the target rate is gradually increased, eventually up to the detected rate capacity of the communications path. Implementations of the present invention improve the efficiency of bandwidth allocation by reducing the over-allocation of bandwidth to data flows during the slow-start phase, leaving more bandwidth available to other data flows.